

21-GP1-097 Economic Impact Data Sheet

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants and businesses.

Demand responsive functionality will present a cost-saving opportunity for buildings in the future. More and more utilities are moving beyond voluntary programs and are expanding use of time-of-use rates for electricity as a tool for shaping demand. Installing demand-responsive thermostats now will allow building tenants and owners to better control their utility costs.

Demand responsive functionality has been required in Title24 since the 2013 edition and was found cost effective in CA.¹ In the 8 years since, equipment prices have decreased (less than \$60 for a basic DR thermostat² compared to just under \$30 for a basic 7-day programmable thermostat³) and WA peak prices have increased.

This proposal requires that thermostats in commercial buildings have demand control functionality that can be used to adjust thermostat set-points. Since this requirement is part of the construction code, it will not require buildings to participate in any demand response programs. But it will ensure that buildings are capable of participating, so that Washington buildings will be able to help integrate building loads with available production.

Grid flexibility is one of the foundations of achieving meaningful decarbonization of building energy as it is an essential element of decarbonizing the electrical grid. Carbon free energy sources like solar and wind have varying production over the course of the day and the year. Demand responsive controls that can respond to demand response signals enable buildings to shape their loads to better align with available energy production. This could come in the form of curtailing energy use when demand is high or utilizing excess production for building tasks like pre-conditioning spaces or service hot water when demand is lower.

The ability to adjust by 4 degrees was chosen based on demand flexibility requirements in California's energy code Title 24 Part 6. This will align the requirements with the biggest American market – which is also a neighboring market – for demand responsive thermostats.

The proposal includes an exemption for thermostats serving health care and assisted living facilities as these are occupancies where climate control can be related to health care.

¹ *Final CASE Report: Upgradeable Setback Thermostats*, California Statewide Codes and Standards Enhancement (CASE) Program, October 2011, https://title24stakeholders.com/wp-content/uploads/2020/01/2013_CASE-Report_Upgradeable-Setback-Thermostats.pdf

² <https://www.supplyhouse.com/Venstar-T3700-Explorer-T3700-Residential-Digital-Thermostat-2-Heat-1-Cool>

³ <https://www.supplyhouse.com/Lux-P711-010-7-Day-5-2-day-Programming-or-Non-Programmable-Thermostat-Horizontal-Mount-1-Heat-1-Cool>

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

\$0.03/square foot (For residential projects, also provide \$[Click here to enter text.](#)/ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

\$30/unit x (10 units) / 10,000sf

10,000 sf office with 10 thermostat zones of 1000 sf each.

Provide your best estimate of the annual energy savings (or additional energy use) for your code change proposal?

8.3-2.7 WH/ square foot (or) [Click here to enter text.](#)KBTU/ square foot

The Title24 CASE report found 83-274 kWh savings in CA climate zones 1, 2 and 16 (the closest analogous climate zones to WA's climate zones) for a 10,000 office.⁴

(For residential projects, also provide [Click here to enter text.](#)KWH/KBTU / dwelling unit)

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:

This proposal will add a minimal amount of extra plan review. Spec sheets will need to be checked to ensure that the thermostat meets the requirement. There should be no additional inspection time if site inspectors are checking that thermostats are consistent with the construction documents.

⁴ *Final CASE Report: Upgradeable Setback Thermostats*, California Statewide Codes and Standards Enhancement (CASE) Program, October 2011, https://title24stakeholders.com/wp-content/uploads/2020/01/2013_CASE-Report_Upgradeable-Setback-Thermostats.pdf

All questions must be answered to be considered complete. Incomplete proposals will not be accepted.